

RESERVE PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Presses for Cutting Sheet Metal

I, CHARLES JOSEPH RHODES, a British Subject, of Grove Ironworks, Wakefield, Yorkshire, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to presses for cutting sheet metal and particularly to presses of the "Open Gap" or "Overhanging" type. In presses of this type, due to the overhang, the C-shaped frame is liable to "spring" or deflect to an appreciable extent under full load or pressure and to compensate for this deflection it is customary to so construct such presses that the surface of the work table and the face of the ram are slightly out of parallel, so that under full load or pressure the two faces lie in parallel planes. This expedient however, has a deleterious effect on the cutting edges of the dies causing them to wear rapidly.

In my prior Specification No. 566,267 I have described a press of the above type in which, in order to neutralise the adverse effects of the deflection of the C-shaped frame, the ram is adapted to slide on a pair of vertical rods, supported by the lower part of the press frame at points below the work table and extending above the work table, said rods also carrying brackets with bosses at one end through which said rods pass and bosses at their other end through which slide another pair of vertical rods supported at their ends by the ram in parallel relationship to the first-mentioned pair of vertical rods.

According to this invention the ram is guided for reciprocation by grooves of part-circular cross-section formed therein sliding on part-cylindrical members rigidly secured to a bracket carried on upright pillars, which pillars are supported by the lower part of the press frame at points below the work table and extending above the work table.

The part-cylindrical sides are extremely
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accurate and require a minimum of setting. Moreover the new arrangement enables a much lighter ram of cheaper construction to be employed.

Preferably the bracket is adjustably mounted on the upright pillars, so that it may be adjusted upwards or downwards to conform with adjustments made in the stroke of the ram. If, for example, the ram were so adjusted to accommodate certain dies that it projected too far below the slides at the bottom of the stroke, a certain loss of rigidity and accuracy would take place, but this loss may be obviated by a corresponding downward adjustment of the bracket.

The ram is operated from a crank pin by means of a coupling.

One embodiment of the invention will now be described and illustrated with reference to the accompanying drawings, in which:

Fig. 1 is a diagrammatic side elevation.

Fig. 2 is a detail front elevation, and

Fig. 3 is a cross section on the line A—B of Fig. 2.

Referring to the drawings which only illustrate the parts of a press of the "open gap" or "overhanging" type that are necessary for the understanding of the invention, the reference numeral 1 indicates the gapped and substantially C-shaped frame, the upper part of which overhangs the lower part 2, having depending wings 3 and supporting the work table 4.

Bolts 24 and 25 are provided for securing the frame to a base.

The lower parts of two vertical rods 5 of suitable diameter to ensure rigidity are mounted in and secured by set screws to deep bosses 6 formed on the wings 3. A bracket 7 is supported on the rods 5 by means of split bosses 8, through which the rods pass. The bosses may slide on the rods or may be clamped thereto by tightening clamping screws 9. The bracket is provided with tail pieces 10 terminating in internally screw-threaded